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ARTICLE

Task-induced development of hinting behaviors in online task-oriented L2 interaction

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Abstract

Technology-mediated task settings are rich interactional domains in which second language (L2) learners manage a multitude of interactional resources for task accomplishment. The affordances of these settings have been repeatedly addressed in computer-assisted language learning (CALL) literature mainly based on theory-informed task design principles oriented to the elicitation of structured learning outcomes. However, such focus on design and outcome has left unexplored the great diversity of emergent interactional resources that learners deploy in situ. With this in mind, and using conversation analysis (CA) as the research methodology, this study sets out to describe the task engagement processes of L2 learners who collaboratively engage in online tasks. A close look into screen-recorded interactions of geographically dispersed participants shows that they orient to numerous context-specific interactional resources, which also locates a process-oriented interactional development site for further examination. To this end, the study presents a longitudinal conversation analytic treatment of a focal participant's context-specific interactional behaviors. The findings explicate the emergence and diversification of interactional resources, thus evidencing task-induced development of L2 interactional competence (IC). By providing participant-oriented, situated, qualitative insights into interactional development in and through online task-oriented L2 interactions, the study contributes to CALL, task design, and L2 IC based on methodological underpinnings of CA.

Keywords: *Task Design, Task-as-Process, Conversation Analysis, Online Interaction*

Language(s) Learned in this Study: *English*

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Introduction

The impact of technology-mediated tasks on the interactional development of language learners has increasingly been a research concern in the field of computer-assisted language learning (CALL). In order to enact such development, a great number of task design directives have been provided through theory-driven taxonomies and design principles (Chapelle, 2001; Doughty & Long, 2003; González-Lloret & Ortega, 2014; Hampel, 2006; Jauregi, Canto, de Graaff, Koenraad, & Moonen, 2011). They have largely drawn on a view of task-as-workplan (Ellis, 2003) that is mainly oriented to an assumption of eliciting task outcomes as a natural result of effective task design. Although such view has substantially expanded the overall understanding of task design through highly structured design principles, what the learners actually do during their task engagement has been largely missing (Dooly, 2011; Levy, 2015). Based on the workplan, process, and outcome trichotomy (Breen, 1989; Coughlan & Duff, 1994; Seedhouse, 2005), an overall criticism has been directed toward highlighting the workplan for learning outcomes, thus shadowing the interactional unfolding of task completion. It has also left unexplored the dynamic nature of technology-mediated tasks that is constantly subject to change, actively modified by the learners, and excessively rich in interactional resources (Kurek, 2015). Accordingly, evidence for learner development has been provided based on task outcomes, rather than learners' situated accomplishments (Mondada & Pekarek Doehler, 2004).

With these in mind, the current study aims to recalibrate the reflexive relationship between the workplan and outcome by shifting it into a relationship between the workplan and process, thus treating the latter as a central concern in order to inform task design procedures. For this purpose, the study provides qualitative insights into what second language (L2; i.e., English) learners are actually doing (Dooly, 2011; Levy, 2015) over the course of online emergent information gap tasks using conversation analysis (CA). The participants try to complete process-oriented tasks (i.e., requiring procedural or interactional engagement with the tasks) based on online interactions with video-mediated online interaction software and their coordinated on-screen activities (Balaman & Sert, 2017c, 2017a; Sert & Balaman, 2018). The tasks for the study have been designed with a stance on task design that is minimal in predetermined task requirements, loosely-structured, and oriented only to promote task engagement processes (for a detailed description, see below), referred to in this study as *process-oriented tasks*. The examination of geographically dispersed participants' screen-recorded online task-oriented L2 interactions reveals that the participants' L2 interactional competences (ICs) develop over time explicated with a diversification of interactional resources for accomplishing some context-specific social actions (Pekarek Doehler & Pochon-Berger, 2015). An understanding of the participants' orientations to context-specific actions is considered important in order to explicate the interactional affordances of the focal setting. Accordingly, hinting emerges as a completely context-specific social action and determines the emergent focus of the study. In this regard, hinting is defined as mobilizing a specific response by withholding a direct expression in the design of a turn and pursuing the response or a demonstration of understanding at sequences of talk-in-interaction (Balaman, in review). Therefore, doing hinting in interaction is an observably complex work that entails successful management of a number of L2 resources also by drawing on the contextual requirements, thus being a great site for investigating situated learner accomplishments.

The findings also demonstrate that contextual configurations are explicitly oriented to by the participants in ways that can be demonstrably linked to task design within the online interactional setting, creating the basis for the conceptualization of task-induced development. To this end, one focal learner's interactional development is described with the emergence of interactional resources for doing hinting as a context-specific social action and the diversification of these resources for situated accomplishment of the same social action over time. All in all, the longitudinal conversation analytic treatment of online interactions evidences task-induced development of L2 IC in an online setting by explicating the learners' situated orientations and subsequent emergence of learning out of these orientations as the basis for interactional development.

The study also draws on an emerging methodological shift in CALL literature based on CA (e.g., Balaman & Sert, 2017c, 2017a; Cekaite, 2009; Dooly & Davitova, 2018; Dooly & Tudini, 2016; González-Lloret, 2011, 2015; Jenks, 2009, 2014; Kitade, 2000; Musk, 2014, 2016; Negretti, 1999; Piirainen-Marsh & Tainio, 2014; Sert & Balaman, 2018; Suzuki, 2013; Tudini, 2010). CA research on technology-mediated settings has contributed to various disciplines by providing descriptions of learner behaviors in different media. However, these studies have added to longitudinal accounts of learners' interactional development to a lesser extent (Piirainen-Marsh & Tainio, 2014), unlike research on L2 IC (i.e., in offline settings) that has been growing exponentially based on CA findings (Hall, Hellermann, Pekarek Doehler, 2011; Nguyen, 2011; Pekarek Doehler & Berger, 2016; Pekarek Doehler & Pochon-Berger, 2015). To this end, the study also aims to incorporate CA and CALL based on the descriptions of task-induced development of L2 IC in an online interactional setting. To do that, the following section will provide a review of literature on task design in CALL and L2 IC. Afterward, the details concerning the participants and the task design procedures will be presented along with the methodological background of the study. It will also center the analysis on the focal social action and the focal participant. Finally, the article will be concluded with a discussion on main findings and relevant literature.

Background to Task-induced Development of L2 IC

Task Design in CALL

Research on task design has proliferated CALL literature with task design principles (Chapelle, 2001; González-Lloret & Ortega, 2014; Gruba, 2004; Hauck & Youngs, 2008; Rosell-Aguilar, 2005), theory-informed design frameworks (Doughty & Long, 2003; Hampel 2006, 2010; Hauck, 2010; Jauregi et al., 2011), and teachers' decision-making processes for task design (O'Dowd & Ware, 2009). Within this line of research, Chapelle's (2001) principles have been an early example for an attempt to promote learner outcomes based on task features such as authenticity, meaning focus, learner fit, language learning potential, positive impact, and practicality. Her taxonomy has received much attention in CALL literature. For instance, Wang (2007) has adopted these features for task design oriented to video-mediated interactions. Kurek and Müller-Hartmann (2017) have recently reevaluated the model for telecollaborative interactions and expanded the model with further guidelines. Doughty and Long (2003) have also determined some methodological principles with a psycholinguistic stance on task-oriented interactions, and González-Lloret (2003) has incorporated their model into Chapelle's (1998) principles for developing multimedia to inform the design of an online task environment. Hampel (2006, 2010), on the other hand, has adopted the well-known approach, design, and procedure cycle by Richards and Rodgers (2001) for task design in digital environments. Another theory-informed contribution to task design research in CALL has come from Jauregi et al. (2011), based on set of principles for design in 3D virtual environments. Further design principle suggestions have been proposed by Gruba (2004) and Rosell-Aguilar (2005), both oriented to providing comprehensive models for eliciting task outcomes based on effective task designs. Finally, González-Lloret and Ortega (2014) have recently determined conditions for effective technology-mediated task designs with reference to primary focus on meaning, goal orientation, learner-centeredness, holism, and reflective learning.

The aforementioned models have all made substantial contributions to implementation of technology-mediated tasks with highly structured principles on every possible constituent of tasks. Their focus has been mainly on eliciting successful task outcomes that might eventually facilitate interactional development of learners as a result of the task design, thus the focus being on task-as-workplan (Ellis, 2003). However, their feasibility still remains to be seen, due to an underdeveloped focus on what the participants are actually doing during the task engagement processes. Although some researchers have tried to provide process-oriented evidence to task impact on learner development (Jauregi et al., 2011; Smith, 2005) and have made contributions based on theory-informed and researcher-oriented constructs, such as negotiation for meaning (e.g., Fernández-García & Martínez-Arbelaiz, 2002; Smith, 2003; van der Zwaard & Bannink, 2014, 2016; Yanguas, 2010), data-driven, situated, emic-oriented findings, which can potentially unpack learners' emergent orientations to online tasks, are yet to be reported. With this in mind, the current study investigates task engagement processes in and through task-oriented interactions to complete process-oriented tasks in order to reveal the emergence and diversification of interactional and linguistic resources, thus documenting the development of learners' ICs in an L2.

L2 IC and its Development

Learner development in interaction has long been a research concern in various fields for an overall understanding of the role of interaction in language learning. Following the critique of mainstream, cognitivist SLA research by Firth and Wagner (1997), conversation analysts have been increasingly interested in providing concrete evidence to interactional development in learning settings. Although they have various approaches to conceptualize learning, there has been a widely accepted consensus over referring to the development of IC in an L2 as evidence to such development. L2 IC has been defined as the deployment of context-sensitive interactional and linguistic resources for accomplishing social actions (Hall & Pekarek Doehler, 2011). As for the development of L2 IC, Hellermann (2009) has described diversified methods for initiating and resolving repair, thus establishing mutual understanding, in task-oriented L2 interactions. Pekarek Doehler and Pochon-Berger (2011) have traced disagreement sequences

in L2 talk-in-interaction and described longitudinal diversification of methods for disagreeing. Markee (2008) has focused on learner behaviors in classrooms and has described the incorporation of technical vocabulary into a focal learner's interactional repertoire. Rine and Hall (2011), on the other hand, have framed increased use of teacher-specific actions as an indicator of developed L2 IC. Similarly, Pekarek Doehler and Berger (2016) have pursued an increased ability in story-openings in L2 interactions. Of direct relevance to the current study, Nguyen (2011) has also contributed to the understanding of interactional development, examining how a novice pharmacist develops ICs longitudinally as result of repeated interactional encounters with customers and with reference to context-specific social actions. Overall, growing literature on the development of L2 IC has focused on the routinization of interactional patterns (e.g., Pekarek Doehler, 2010), incorporation of specific social actions into interactional repertoires (e.g., Markee, 2008), and increased use, ability, and diversification of interactional resources to enact social actions (e.g., Hellermann, 2009; Nguyen, 2011; Pekarek Doehler & Berger, 2016; Pekarek Doehler & Pochon-Berger, 2011; Rine & Hall, 2011).

Previous research has also provided evidence to situated learner actions mediated by successful management of contextual requirements in settings such as chat rooms (Jenks, 2014), gaming (Piirainen-Marsh & Tainio, 2014), collaborative text construction (Cekaite, 2009; Gardner & Levy, 2010; Levy & Gardner, 2012; Musk, 2016), and telecollaboration (Dooly & Davitova, 2018; Dooly & Tudini, 2016). However, a similar interest in L2 learners' interactional development has been pursued to a lesser extent. Piirainen-Marsh and Tainio (2014) have sought evidence to such development and described the side-by-side participants' orientations to gaming characters with a focus on their longitudinal epistemic change as result of an increased expertise in gaming, thus revealing their developed L2 ICs. However, there remains a lack of research interest in interactional development in and through geographically dispersed participants' interactions. This further leaves unexplored the context-specific interactional resources that L2 learners deploy to accomplish social actions (e.g., hinting) in collaboration particularly oriented to online tasks. Against this background, the current study sets out to describe the emergence and diversification of context-specific interactional resources (Pekarek Doehler & Pochon-Berger, 2015) for hinting and frames conversation analytic findings as task-induced development of L2 IC over time.

Methods

This section provides details concerning the participants of the study, the task design procedures on a specific online task interface, and the methodological background to the study.

Participants

The current study focuses on a group of participants who voluntarily took part in an online conversational project as members of a leisure-time L2 conversation club while they were also pursuing an undergraduate degree in English language teaching in Turkey. This program accepted students based on their scores on grammar, reading, and vocabulary in a country-wide entrance exam. Considering that the exam was not oriented to test any kind of production and despite their high proficiency in the tested skills, most of the students started the program with underdeveloped productive skills and put some extra effort particularly to develop their speaking skills. The conversation club was founded by the department students in response to this effort and functioned as a student organization to ensure that they could practice L2 interactional skills with peers in the department. The club members organized weekly meetings for this purpose and engaged in L2 interaction. The current project aimed to offer an alternative meeting venue to the members and an open call was made for participation in the online conversational sessions. The voluntary participants (N = 20) were divided into random groups of four for weekly meetings on Google Hangouts in order to complete online tasks as a group.

Of all the groups (N = 5), the focus of the current study is on a single participant's interactions with her co-participants in a single team mainly to document the longitudinal interactional development of a focal participant over time. Although the findings are based on concrete analytic evidence, this article makes no

generalizations for the development of the other teams neither for the co-participants of the same team, which might be noted as a limitation. To this end, the following section provides a detailed description of the interactional setting for an overall understanding of the impact of the task design on the interactional development of the focal participant, thus laying the ground for the unfolding of task-induced development of L2 IC.

Task Design

The online tasks were delivered on a specific task interface (see Figure 1), which included three on-screen clues (i.e., title, textual clue, and visual clue), an answer box, a submit button, a feedback area (i.e., correct answer or wrong answer), and a status chart. The participants visited the interface, while they were also online on Google Hangouts. After they checked out the on-screen clues, they were expected to find a predetermined keyword as the correct answer based on their online interactions and further on-screen activities such as searching clues on Google search, searching the visual clue on Google images, reading Wiki pages, clicking, copying, pasting, highlighting, and changing tabs. In order to capture a complete picture of the rich multimodality in this interactional setting, the data was collected via an online screen-recorder software (Screencast-O-Matic). Therefore, the data included online interactions of the participants as well as their on-screen activities unfolding in coordination with their interactions (Sert & Balaman, 2017c). For task design purposes, the project adopted emergent information gap tasks (Balaman, 2016) that facilitated the emergence of knowledge gaps in situ when the participants visited the task interface rather than imposing or pre-assigning gaps to the participants. The knowledge gaps between each participant emerged depending on their recognition of the on-screen clues (i.e., emergent information gaps). These gaps were later expanded based on the participants' on-screen activities which helped them gain access to further information that could lead them to the correct answer. Finally, the gaps reached a point when the participants needed to undertake further actions to minimize the difference between each participant right after one of them found the correct answer. This minimization process was ensured by a task rule that the participants were informed prior to the task engagement process and that they also negotiated repeatedly in earlier weeks (Sert & Balaman, 2018). The rule was "do not tell the correct answer to the co-participants directly, instead add new clues", thus engaging hinting to complete the task as a group. The participants followed this rule and attended to it in case of possible breaches (Sert & Balaman, 2018). It should also be noted that they oriented to the task rule without the guidance or on-site presence of teachers, moderators, or researchers. Their engagement in hinting was further encouraged with the design of the interface in that it did not allow any team members to preview the next question before everyone in the team found the correct answer. Therefore, task completion in this setting was in all cases a collaborative effort which the participants had to orient to by hinting and responding to hinting. With this in mind, the following is a brief summary of how task engagement process usually unfolded:

1. The participants went online on Google Hangouts with their teammates and visited the task interface to check the clues (e.g., *Big Apple Times*, *today's ad*, and *FrontPage* in Figure 1).
2. They discussed the implications of the clues on Google Hangouts and undertook great numbers of on-screen activities. For example, in Figure 1, the participants were expected to explore that *Big Apple* was a reference to New York, with the title thus being *New York Times*. In relation to that, the visual and textual clues aimed to direct them to *today's ad* at the *front page* of the journal, which required both conducting on-screen activities and talking about it in coordination.
3. Once one of the participants entered the correct answer, a tick appeared on the status chart and it was almost always followed by the participant's announcement of having found the correct answer. Following that, the participant was normatively expected to initiate a hinting sequence to lead the team toward task completion.
4. Hinting sequences, as byproducts of the participants' task engagement, were repeatedly expanded, recycled, and finally completed in collaboration with the co-participants. The task interface made task completion clear by taking the participants either to the next question or to a summary page if it was the last question.

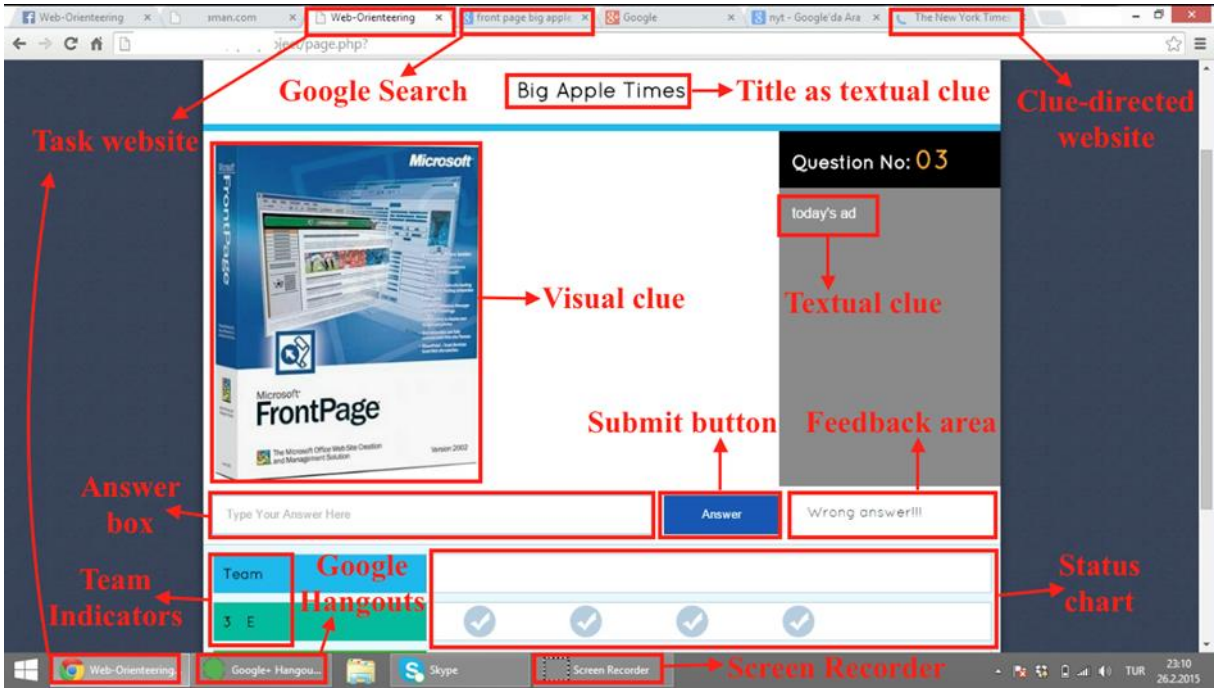


Figure 1. Task interface.

All in all, the task design put the emphasis on the process by maintaining a structure that simply relied on three on-screen clues and the participants' situated co-construction work. The design also observably encouraged the participants to hint in coordination with their on-screen activities. Both the task rule and the design of the interface turned hinting into a central practice in the setting and determined the emergent, data-driven focus of the current study. However, one should still bear in mind that the main impact of task design on the participants' interactions could only be completely unpacked with a focus on the task engagement process rather than solely on the design (Seedhouse, 2005). This underscores what is referred to as *task-induced development*, which is learner development emerging from the task engagement process oriented to complete tasks by addressing their context-specific requirements with an observable diversification of interactional resources over time. In other words, the term is used to explore the development of task-oriented procedural learner behaviors rather than experimental, assumptive, and design-oriented task effects. Accordingly, this study sets out to explicate how a focal participant's hinting behaviors change over time with reference to the successful management of contextual configurations in coordination with task-oriented online L2 interactions. For this purpose, the following section initially presents the analytic background to the current study and finally describes the context-specific interactional mechanism of hinting in this online interactional setting with reference to the collection under examination (see Table 1).

Analytic Background to the Study

This study uses CA as the research methodology for the treatment of screen-recorded online multiparty interactions. CA examines social interaction with a strong emphasis on the minute details of interactional mechanisms using socio-analytical constructs such as turn-taking, sequence organization, repair, and preference organization (cf. Sacks, Schegloff, & Jefferson, 1974; Sidnell & Stivers, 2013). CA analyses aim to describe participant behaviors in the ways that they unfold sequentially and to explicate the ways that participants themselves orient to these behaviors turn-by-turn in and through talk-in-interaction. It is widely employed in a great variety of research fields that set out to reflect social interactional mechanisms adopting an emic perspective. The participants take, allocate, and share turns by their situated analysis of the previous turns. They formulate turns (e.g., a question) and make a specific type of response or displays

of understanding or orientation relevant to the next turn (e.g., an answer), thus referring to an underlying preference organization. The delivery of these responses facilitates the emergence of sequences of talk-in-interaction. The succession of turns at sequences also points to the members' methods deployed for accomplishing precise social actions (e.g., hinting). The participants also orient to troubles in hearing or understanding and use repairs to restore the progressivity of talk-in-interaction. Thus, turn formation, sequence and preference organization, and repair reveal CA's methodological stance for an understanding of action formation in talk and further modalities in interaction (i.e., computer-mediated communication; see Tudini & Liddicoat, 2017). CA basically uncovers the emergent, situated meaning making procedures of participants by providing evidence directly based on their own orientations demonstrated in a next turn (i.e., next-turn proof procedure). To this end, CA analyses are entirely participant-oriented (i.e., emic), unlike researcher-oriented, theory-informed agendas for making sense of the data that are still dominant in CALL research. CA research starts with an unmotivated looking procedure in order to examine the data for an emergent phenomenon (ten Have, 2007). Provided the analyst locates a potential case, the next step is to look for recurrent cases that might turn into collections to examine an emergent social action. Following the collection of repetitive occurrences of a recurrent case, the analyst transcribes the data in detail (for transcription conventions, see Appendix) to understand the micro-interactional mechanisms of the phenomenon with special reference to multiple layers that are deployed for action and knowledge co-construction (Goodwin, 2013; Balaman & Sert, 2017c). Against this background, the current study focuses on the development of an emergent case: hinting in online task-oriented L2 interactions.

For an overall understanding of the interactional development, there is a need to briefly describe the overall pattern for the unfolding of hinting within this interactional setting based on preliminary examination of the data (Balaman, in review). The task design encouraged the participants to engage in hinting for task completion purposes. As a result, the participants (not only the focal one) co-constructed a great diversity of interactional resources for initiating and maintaining hinting sequences. A detailed analysis of the entire corpus showed that hinting is a sequential practice that unfolds with an optional pre-hinting sequence through use of resources such as interrogatives, knowledge checks, and past references. Pre-sequences are not deployed in all cases in which hinting is sequentially enacted. Afterward, base hinting sequences are initiated with the deployment of resources such as designedly incomplete utterances (Koshik, 2002), blah blah replacements (i.e., replacing the correct answer with *blah blah* with a similar action format to designedly incomplete utterances), and metalinguistic clues oriented to the form of the withheld correct answer. Additionally, these sequences unfold as screen-based hinting in the form of page descriptions, instruction giving (Markee, 2015), course of action proposals (Waring, 2015), and procedural informings (Gardner & Mushin, 2013, 2017). Finally, there are further cases that the participants do not draw on the context-specific interactional resources but engage in a generic hinting work, which is referred to as a verbal clue in the present article. It is important to note that providing further details to the sequential structure of hinting is beyond the scope of the current study and this article specifically focuses on the development of a focal participant (ZEH) based on this structure.

Table 1. *Diverse Interactional Resources for Hinting*

Pre-Hinting Resources	***N***	**Base Hinting Resources**	***N***
Interrogative	9	Screen-based hinting	48
Knowledge check	4	Blah blah	29
Past reference	2	Designedly incomplete utterance	6
		Metalinguistic clue	5
		ZEH (the focal participant)	**19**

In the data under examination, 83 cases of hinting were explored as illustrated with different resources in Table 1. Of all cases, ZEH, the focal participant, initiated 19 hinting sequences in the data. The current

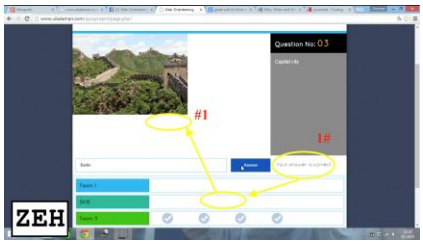
study examines five cases that are selected in terms of the emergence of the resources in the recorded interactions. In other words, the first time that an interactional resource is deployed for hinting falls into the scope of the study for further examination. It should also be noted that the final extract in the study (Extract 5) does not point to the emergence of any resources but it does provide an overall summary to the use of previously emerging resources through the end of the entire task engagement process. All in all, the following section presents conversation analytic examination of extracts from Weeks 3, 4, 8, and 10 for the emergence of the resources and an extract from Week 14 for an overall picture of the diversification of interactional resources for hinting over time.

Analysis

This section presents analyses of five extracts from five different weeks to show the longitudinal diversification of interactional resources for doing hinting. Each extract will be preceded with details of the on-screen clues to better describe the task procedures for each episode. However, it should also be noted that the participants do not necessarily draw on these clues all the time although they maintain their orientations to the context throughout the task engagement process. Following the analysis of each extract, a brief summary of the findings will be given. After the analyses of all extracts, an overall summary of main findings will be provided. To these ends, Extract 1 comes from Week 3 of the task process when ZEH engaged in hinting for the first time in the collected data. The task interface contained *erected and dismantled* as the title, a photo of the Great Wall of China as the visual clue, and *capital city* as the textual clue. The participants were thus led to find out a capital city that hosted a dismantled wall, referring to Berlin (i.e., the correct answer).

Extract 1. *Week 3, 00:25.41.4–00:26:00.2*

```
                1#
1   ZEH:    ↑o::h (.) i found that $↓hahhhh$
2           (1.1)
3           in germany (0.5) a city in Germany
4           (1.9)
5           er:
6           (5.3)
7   DEN:    [what is it?
8   NUR:    [yeah?
                #1
9           (4.0)
```



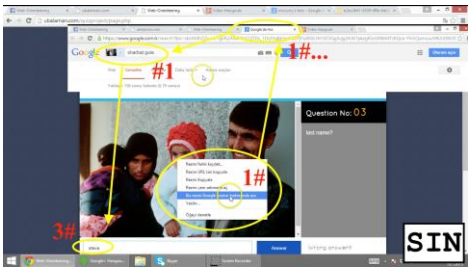
1# - Lines 1–9: ZEH makes the announcement following the receipt of the feedback from the task interface. She scrolls down to check the status chart, then scrolls up and down on the interface, yet does not make any tab changes in the browser during the entire episode.

Extract 1 starts with ZEH's announcement of finding the correct answer in Line 1 (`i found that`). She makes the announcement following her receipt of the feedback from the task interface (1#); however, she does not undertake any further on-screen activities during the episode (#1). She ends the announcement with turn-final laughter which precedes 1.1 seconds of silence. In Line 3, she initiates the hinting sequence by referring to the country in which the city that is the correct answer (Berlin) is located. Following 0.5 seconds of intra-turn silence, she upgrades her hinting turn and explicitly refers to a city (`a city in Germany`). Also note that her hinting initiation does not fall into the scope of any of the context-specific hinting types, thus being only a verbal clue. She does not add any more clues to facilitate task completion and 1.9 seconds of silence occurs in Line 4. This is followed by a hesitation marker (`er:`) and another silence that is relatively longer this time occurs. It is treated as a failure to add more clues as explicated in the following lines in that DEN requests for information (`what is it?`) while NUR requests for continuation (`yeah?`) in an overlapping fashion. However, ZEH does not respond to these requests and another long silence occurs. Therefore, earlier in the task engagement process (i.e., Week 3), she relies only on a verbal clue and fails to add more clues to facilitate task completion.

Extract 2 comes from Week 4 of the task process when ZEH engaged in hinting once again and deployed screen-based hinting for the first time in the collected data. She also maintained generic hinting work with the deployment of a verbal clue. The task interface contained *from McCurry's lens* as the title, *last name* as the textual clue, and a recent photo of the widely-known National Geographic cover, the *Afghan Girl* taken by the famous photographer Steve McCurry that is given as the visual clue. The clues referred to her last name as the correct answer (i.e. *Gula*).

Extract 2. *Week 4, 00:03:01–00:03:26*

```
1  ZEH:  you should search
2        this ↑pho↓to on ↑google                    1#
3        (1.6)
4  SIN:  oka::y
5        (0.8)
                  2#
6  ZEH:  and the first er:: (1.4) ermhhh
7  SIN:  okay okay (i'm tracking of it)
8        (4.9)
9  ZEH:  this [woman's name shhh
10 SIN:       [okay (.) okay okay
11 ZEH:  sharbat
                    #2
12 SIN:  okay okay i found okay
          #1 3#
13 ZEH:  [°hah°
14 SIN:  [wait
15       (0.6)
16 ZEH:  [°hah°
17 SIN:  i'm writing
             #3
18       (4.8)
```



1# - Lines 2–13: SIN right clicks on the visual clue on the task interface and clicks on search image on Google. A new tab appears in the browser and she clicks on it. She moves the cursor around the search page where the correct answer appears in the search box.

3# - Lines 13–18: SIN returns to the task interface and starts removing her previous candidate answer.

2# - Lines 5–12: ZEH turns to Google search from the task interface; moves the cursor around the screen; and returns to the task interface at #2 in Line 12.

ZEH initiates a hinting sequence with a screen-based hinting turn in the form of an instruction that is oriented to Google image search (`you should search this ↑pho↓to on ↑google`). SIN aligns with the instruction with an on-screen activity (1#) and also verbally using an acknowledgement token (`oka::y`). In Line 6, ZEH continues hinting with a turn-initial continuation marker and refers to a first (possibly to the first search result); however, she does not proceed as marked with two hesitation markers and a long silence in between (`er:: (1.4) ermhhh`). This might indicate a word search and trouble in the maintenance of hinting as further evidenced with her on-screen activity during which she moves the cursor around Google search page parallel to the hesitation markers (2#). SIN responds to this with repetitive acknowledgement tokens and explicates her pursued alignment with the previous instruction. Following a long silence (4.9 seconds), ZEH adds a verbal clue to her previous screen-based hinting (`this woman's name`) in overlap with SIN's another round of repetitive acknowledgement tokens in Line 10. ZEH completes her verbal clue in Line 11 (`sharbat`), yet leaves it incomplete as evident due to the lack of reference to the last name of the woman, which is also the correct answer (Gula). Also note that it is not her turn that is left designedly incomplete (Koshik, 2002), but it is the social action of hinting that is incomplete, which eventually points to further trouble in hinting. This observable trouble does not delay task accomplishment and SIN returns to the task interface to submit the correct answer (3#).

As a result, Extract 2 shows that ZEH initiated a screen-based hinting sequence for the first time in task engagement process in Week 4, although she failed to proceed and to build on the hinting sequence. She also continued using verbal clues rather than deploying context-specific hinting types but did not proceed

to the delivery of these clues either. Therefore, she observably failed to mobilize the best guess using diverse interactional resources, and the task completion was largely up to the co-participant's individual on-screen activity.

Extract 3 comes from Week 8 of the task process when ZEH used a blah blah replacement for the first time in the collected data. She also initiated a screen-based hinting sequence, thus combining two context-specific resources for hinting. The task interface contained *HAO* as the title, *nick* as the textual clue, and the photo of a professional game player as the visual clue. The correct answer was the nickname of the game player (i.e., *General*) whose name was HAO. Prior to the extract, the participants had traced the photo back to a Wiki page in which biographical details of the player were available.

Extract 3. *Week 8, 00:07:07–00:07:22*

1	ZEH:	in the first sentence (0.4) **1#**
2		↑in the first sentence (0.6)
3		chen hao °.hhh° (0.5)
4		↑in biography.
5	DEN:	yes **2#**
6	ZEH:	er: nicknamed blah blah blah
7	SIN:	what >uh- i<
8		(1.8)
9	DEN:	↑hu:hh
10	SIN:	(googled it)
11	DEN:	o↓kay- ↑oka:y **#2** **#1**

1# - Lines 1-11: ZEH moves the cursor around the Wiki article and holds the cursor on top of the item that she referred to in her hinting. She also highlights the correct answer in Line 6 parallel to her production of *blah blah blah*.

2# - Line 5: DEN highlights the correct answer parallel to her receipt token in Line 5.

ZEH initiates a screen-based hinting sequence oriented to a Wiki article. She refers to a particular location on the page (↑in the first sentence) and reads aloud a name. She also reads the title of the subsection of the Wiki article to emphasize the particular location. DEN shows receipt of the hinting (yes) and highlights the correct answer on her screen (2#). In Line 6, ZEH continues hinting with reference to the screen but also uses a blah blah replacement to withhold the expression of the correct answer (General). She also marks this with her on-screen activity by highlighting the correct answer (1#). Therefore, she upgrades her screen-based hinting with a blah blah replacement. Although SIN has trouble in understanding and requests for clarification (what), DEN displays understanding with a change of state token (↑hu:hh) in Line 9 and repetitive acknowledgement tokens (o↓kay- ↑oka:y) in Line 11. Both DEN (#2) and ZEH (#1) return to the task interface following the successful mobilization of the best guess as result of ZEH's hinting.

To this end, Extract 3 shows how ZEH deployed a blah blah replacement for the first time in task engagement process and how she successfully combined it with her screen-based hinting. It also reveals that screen-based hinting became a part of ZEH's interactional repertoire, as she maintained deploying it in later weeks (Week 8), even in combination with further resources. Moreover, this week showcases a slight diversification of her interactional resources for hinting although she did not manage to facilitate an overall task accomplishment yet, pointing to room for further development.

Extract 4 comes from Week 10 of the task process and demonstrates the emergence of hinting as a sequencing practice in addition to the deployment of screen-based hinting and blah blah replacements. The task interface (also available in Figure 1) contained *Big Apple* as the title (as a reference to New York), *today's ad* as the textual clue, and a photo of the *front page* software as the visual clue. The clues were oriented to lead the participants to the correct answer based on the advertisement (i.e., Tiffany) on the front page of that day's New York Times journal.

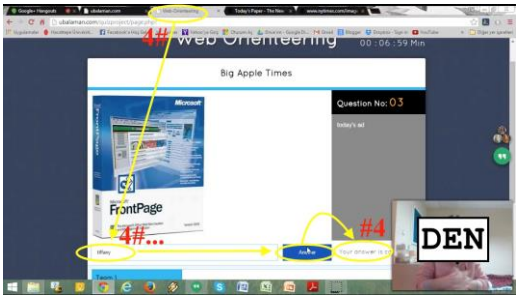
Extract 4. *Week 10, 01:19:08–01:20:45*

```
1  ZEH:  ye::s i found (0.8) er:hhh
2  SIN:  really?
3  ZEH:  ye:s.
4  SIN:  oka:y=
5  ZEH:  =erm: (1.5)
6        when we °erhhh° (0.6)
7        erm: (1.0)
8        ↑are you in the website?
9        (.) web (/zeit/)
10 DEN:  yes
11 SIN:  yes (0.6) yes
12 ZEH:  er:: (0.3)
13       you should click hmm (0.3)
14       ↑today's paper
15       (2.3)
         25 LINES OF COMPLAINTS ABOUT
         SLOW INTERNET CONNECTION AND
         REQUESTS FOR WAIT TIME OMITTED
39 SIN:  zehra you can go on
40       (1.7)
41 ZEH:  °erm° wait please (0.7)
42       er:↑ then today's front page (0.3)
43       er: do you see?
                1#
44 DEN:  yes (0.3) i can see it
45 SIN:  [ye:s
46 ZEH:  [er: new york edition
          #1   3#
47       er: (0.5)
48       i click these (0.5)
49       and erm: (0.4)
                          2#
50       <right corner> (0.5)
51       right under corner (0.4)
                          #3 4#
52       er: will ↑you (1.2) blue
53 DEN:  huhh=
54 ZEH:  =>edvertisement<
55 SIN:  [wait]
56 ZEH:  [blah] blah and ↑co:
57       (2.0)
58 DEN:  °oka:y°
             #2 #4
59 SIN:  °great.°
```

1# - Lines 44–47: DEN clicks on the New York edition of Today's Paper and the page pops up at #1 in Line 47.

3# - Lines 47–52: DEN scrolls down on the page to the part where the correct answer (Tiffany) is located and moves the cursor up to change the tab at #3 in Line 52.

2# - Lines 50–59: SIN clicks on the New York edition of Today's Paper and the page pops up. However, the page keeps loading #2 in Line 59.



4# - Lines 51–59: DEN returns to the task interface, types the correct answer to the answer box, clicks on the submit button, and receives the correct answer at #4 in Line 59.

Extract 4 starts with ZEH's announcement of finding the correct answer, which is immediately oriented to by SIN. In Lines 5–7, ZEH tries to initiate hinting; however, she fails to formulate a complete utterance. In Line 8, ZEH finally formulates a grammatically complete interrogative to check for the current on-screen activities of the co-participants (`↑are you in the website?`). Following their affirmative responses, she initiates a screen-based hinting sequence (`you should click hmm (0.3) ↑today's paper`), which also shows that her previous interrogative is oriented to establish mutual orientation (Jenks & Brandt, 2013) toward the page. Thus, it functions as a pre-hinting sequence laying the ground for the forthcoming base hinting sequence. The extract is disrupted for a while due to a technical trouble on SIN's computer (Lines 16–38, omitted). After SIN is ready to orient to the task, she requests for continuation (`zehra you can go on`) in Line 39. Following a request for wait time, ZEH marks the continuation of her previous hinting (`then`) and formulates another interrogative (`do you see?`) in Line 43, responded to with affirmations by both co-participants. By doing this, ZEH restores the mutual orientation toward the page that was disrupted due to the technical trouble, as result of a pre-hinting sequence initiated with an interrogative once again. In Line 46, she engages in a screen-based hinting sequence to direct the co-participants to a specific location at the page. In the meantime, both DEN (1# and 3#) and SIN (2#) undertake on-screen activities in alignment with ZEH's instruction oriented to the page. SIN cannot get access to the described page due to slow Internet connection (#2), while DEN successfully finds the correct answer (4#) and submits it on the task interface (#4). DEN also displays understanding with a change of state token (`huhh`) in Line 53. Finally, ZEH combines her screen-based hinting with a blah blah replacement (`[blah] blah and ↑co:`), just like she did in Extract 3, in Line 56 in an overlapping fashion with SIN's request for wait time. Following 2.0 seconds of silence, DEN uses an acknowledgement token to display understanding (`°oka:y°`) while SIN orients to ZEH's hinting with an assessment (`°great.°`).

In Extract 4, ZEH provided stronger evidence supporting the finding that screen-based hinting was part of her interactional repertoire. Furthermore, she combined it with a blah blah replacement once again, possibly indicating that she added such combinations to her repertoire as well. The extract also provided evidence to further diversification of interactional resources for hinting in that she engaged in some prefatory work prior to hinting sequences. Therefore, she successfully initiated pre-hinting sequences, pointing to development, in terms of hinting as a sequencing practice, at Week 10 of the task engagement process. Extract 5 shows how she continued hinting as a sequencing practice toward the end of the process.

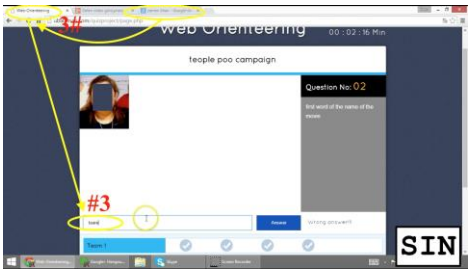
The final extract of the study comes from Week 14, when ZEH deployed diverse interactional resources for hinting in combination. The task interface included *teople poo campaign* as the title with reference to a dyslexia relationship in the movie, *first word of the name of the movie* as the textual clue, and a professor in the department whose last name was Khan, referring to the leading actor in the movie. These clues referenced the famous Indian movie, *Taare* (i.e., the correct answer) *Zameen Par*.

Extract 5. *Week 14, 00:04:18–00:04:56*

```
1  ZEH:  uhh i found a↑ga:in jo-
2        [you know erm: blah
3  SIN:  [°oka-° we ca:n check
4  ZEH:  blah /z∧me:n/ par uhmm: (0.5)
5        stars (0.3) on ↓the (0.7)
6        ↑ah- amir khan's mo↑vie (0.7)
7        er: blah blah (0.3)
8        /z∧mmein/ (1.1) ↑par (0.7)
9  SIN:  okay wai- (.) wait
10       (2.6)
11 ZEH:  you should write [google
12 SIN:                   [wait
13       (0.6)
14 ZEH:  /z∧ma:n/ (0.3) par
15 SIN:  /°z∧ma:n°/
16 ZEH:  par
17 SIN:  par
18 ZEH:  and er: [there is a
19 SIN:          [/z∧ma:n/
20 ZEH:  movie
21 SIN:  huh huh
22 ZEH:  blah blah [/z∧ma:n/
23 SIN:            [huh
24 ZEH:  par
25       (2.0)
26       the resul- hhh
27       the answer is the first word
28       (0.6)
29 SIN:  okay
```

1# - lines 8-10 - ZEH searches the name of the movie on Google and receives the results at #1 in line 10. She holds the results page open during the entire episode.

2# - lines 14-25 - SIN types zameen khan, mistaken name of the movie, to Google search and receives the results. She scrolls down on the results page and moves the cursor on top of the correct name of the movie at #2 in line 25.



3# - lines 25 – She moves the cursor up on previous on-screen activity and changes the tab to the task interface. She types the correct answer (taare) but does not submit it during the episode.

Extract 5 starts with ZEH's announcement of finding the correct answer. She initiates the hinting sequence with a blah blah replacement in overlap with SIN's candidate proposal for a path to find the correct answer. Following the resolution of the overlap, ZEH completes her blah blah replacement and delivers the name of the movie (/z∧me:n/ par), the first name of which is the correct answer (Taare). In Line 5, she also provides an English translation for the movie but leaves it incomplete. Unlike the earlier weeks, this incomplete utterance does not cause a disruption, she immediately continues hinting with reference to the leading actor of the movie (amir khan's mo↑vie), which is also a verbal clue, and repeats the previous blah blah replacement. In the meantime, she also searches the name of the movie (1#) to use it as the basis for screen-based hinting as explicated in Line 11. Following repetitive wait time requests, SIN aligns with ZEH's instruction and undertakes a Google search (2#) but types the name of the movie wrong. What follows is ZEH's completion of the screen-based hinting and SIN's repetition that displays her

understanding. In Line 18, ZEH maintains hinting with a turn-initial continuation marker (`and`) oriented to her previous screen-based hinting. SIN shows receipt (`huh huh`) and scrolls down on the search results page until she finally moves the cursor on top of the movie (#2). Over the course of this screen-based hinting, ZEH repeats the blah blah replacement in Line 22. Finally, ZEH narrows down her instruction to the first name of the movie and SIN returns to the task interface to submit the correct answer (3#) although she reaches the correct answer using a different search path.

As a result, Extract 5 shows the maintenance of the deployment of diverse interactional resources for hinting such as verbal clues, blah blah replacements, screen-based hinting, and hinting as a sequencing practice. The final resource unfolded through the accomplishment of the task in a stepwise fashion although a pre-hinting sequence was not recorded.

Summary of Main Findings

The analysis started with ZEH's first initiative to do hinting in Week 3 of the task engagement process using a verbal clue. It revealed that ZEH's earlier attempt to engage in hinting was mainly done with a verbal clue, rather than addressing context-specific hinting types. As an extension to her limited interactional repertoire for hinting, she failed to add more clues and disrupted the hinting sequence. One week later, she deployed a verbal clue once again for initiating a hinting sequence and revealed that verbal clues had been part of her interactional repertoire since the beginning of the task engagement process. Week 4 was also the first week that screen-based hinting emerged as ZEH's context-specific interactional resource use. However, she again failed to build on her initial screen orientation for the construction of a hinting sequence meant to facilitate the completion of the task. As a result, task completion was mainly realized through the co-participants' individual on-screen activities. In Week 8 of the task engagement process, ZEH replaced the correct answer with blah blah for the first time and deployed another context-specific hinting initiator. She also engaged in screen-based hinting and showed that screen-based hinting was part of her interactional repertoire, also pointing to the diversification of interactional resources for hinting. Two weeks later, ZEH demonstrated that she added screen-based hinting to her interactional repertoire as well as blah blah replacements. It should also be noted that it was the second time that she combined two context-specific hinting types over the course of hinting. Week 10 also pointed to further development in terms of hinting as a sequencing practice with a signal of the forthcoming action by initiating a pre-hinting sequence. Finally, ZEH combined all of the emergent interactional resources for hinting at Week 14 of the task engagement process and provided concrete evidence for the development of L2 IC as shown by a diversified interactional repertoire. Therefore, she developed from a reliance on a single generic hinting type to the deployment of diverse interactional resources for hinting as illustrated in Table 2 below.

Table 2. *Emergence and Diversification of Interactional Resources for Hinting*

	Emergence of ZEH's Interactional Resources for Hinting	**Development of ZEH's Interactional Repertoire for Hinting**
Weeks 1–3	no hinting	
Week 3	verbal clue	
Week 4	screen-based hinting	• verbal clue • screen-based hinting
Week 8	blah blah	• verbal clue • screen-based hinting • blah blah
Week 10	sequencing practice	• verbal clue • screen-based hinting • blah blah • sequencing practice
Week 14	–	• verbal clue • screen-based hinting • blah blah • sequencing practice

Discussion and Conclusion

The conversation analytic treatment of the data revealed that hinting is a context-specific action in the online interactional setting at hand. Furthermore, there were context-specific types of hinting such as screen-based hinting and blah blah replacements that demonstrably emerged as an extension to the task design. However, the main impact of task design underlies the task-induced development of the focal learners' development of L2 IC as shown in the observable diversification of methods for hinting over time (Pekarek Doehler & Pochon-Berger, 2015). It should be noted that the task design did not really provide any resources to the participants except the ones mediated by the on-screen clues. It did not impose hinting either, yet it encouraged doing hinting for collaborative development. Although one can claim that the development of hinting behaviors naturally emerges due to task design, it would not be possible to evidence without detailed examination that such development occurs through diversification of interactional resources for doing hinting. To this end, both the deployment of the resources and their development over time have been completely uncovered only as result of a close look into what actually happened during the task engagement process (Balaman & Sert, 2017c, 2017a, 2017b; Dooly, 2011; Sert & Balaman, 2018). This also means that such developmental sites would remain hidden without a conversation analytic examination of these processes.

A claim against the development could be an increased familiarity with the task interface. However, it is not well-grounded that task familiarity has an impact, given that the clues and the correct answers are different in each given task. This points to a potential impact of repeated engagements in context-specific hinting rather than familiarity with the structure. It also situates the development in the focal participant's successful management of context-specific resources with an increased ability to hint at the sequential level (Hellermann, 2009; Pekarek Doehler & Berger, 2016; Pekarek Doehler & Pochon-Berger, 2011). Also note that the study does not make any claims for faster task completion that could provide ground for claims oriented to task familiarity. On the contrary, the study evidences the growing ability to initiate, maintain, and resolve hinting sequences through repeated deployment of diverse interactional resources (Markee,

2008; Nguyen, 2011; Pekarek Doehler, 2010; Pekarek Doehler & Pochon-Berger, 2015; Rine & Hall, 2011). This is made possible only with the adoption of CA for the examination of the micro-interactional details of task engagement processes. It also problematizes the relationship between task-as-workplan and task-as-outcomes (Breen, 1989; Coughlan & Duff, 1994; Dooly, 2011; Ellis, 2003; Kurek, 2015; Seedhouse, 2005). A surface-level investigation into task outcomes as tailored results of well-structured task designs could easily overlook an interactional development at the sequential level.

Based on these arguments, this study highlights the importance of revisiting the relationship between design and outcomes and promotes the recalibration of the relationship toward an updated focus on design and process. It also provides background for the conceptualization of task-induced development based on tasks that are dynamic in nature, process-oriented, and less demanding in terms of task requirements for the development of learners' L2 ICs in online task settings. Such a view of task design can potentially contribute to L2 pedagogy as instructors undertake similar designs and implement tasks in various learning settings. Therefore, a focus on task-induced development of L2 IC also underscores a pedagogical implication that might bring further insights into the impact of task design on interactional development of L2 learners. However, it should also be borne in mind that such development might not emerge in a linear fashion as it did for the focal participant, highlighting a need to conduct further research for a broader understanding. Furthermore, the task design in the study might not work similarly for beginner-level learners.

Overall, the current study has also shown the growing methodological potential of CA for CALL (Balaman & Sert, 2017a; Dooly & Davitova, 2018; Dooly & Tudini, 2016; González-Lloret, 2011, 2015; Jenks, 2014; Piirainen-Marsh & Tainio, 2014; Sert & Balaman, 2018; Tudini, 2010). The findings based on line-by-line analysis of situated learner orientations lay the ground for revisiting mainstream CALL research, especially in task-oriented settings (Balaman & Sert, 2017c, 2017a, 2017b; Sert & Balaman, 2018). This might contribute to the development of the field through more grounded and evidence-based research output. With this in mind, further research can explore the interactional mechanisms of diverse online task settings in order to unpack micro-level interactional resources and their diversification over time. It would eventually add to research on interactional development mediated by technology (Piirainen-Marsh & Tainio, 2014) and pave the way for tracking longitudinal change in previously described technology-mediated contexts (Cekaite, 2009; Dooly & Tudini, 2016; Gardner & Levy, 2010; Jenks, 2014; Levy & Gardner, 2012; Musk, 2016; Nguyen, 2017; Nguyen & Langevin, 2016), as the current study has tried to do by framing the findings as task-induced development of L2 IC with reference to hinting behaviors oriented to online tasks.

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Appendix. Transcription Conventions

1#	Onset point of the on-screen activity surrounding the talk that is marked along with the lines of the transcript
#1	Offset point of the on-screen activity surrounding the talk that is marked along with the lines of the transcript
1#...	Continuation of the on-screen activity (used only within the on-screen activity illustrations)
Illustrations	Current screen of the participants who perform the on-screen activities
Circles	Points on the screen where the participants either click or hold the cursor still
Arrow	Direction of the cursor movements within the on-screen activity illustrations
Line 2–5	Duration of on-screen activity represented across lines in order to indicate the scope of each description
Descriptions	Unanalytical descriptions of the illustrated on-screen activities which are provided following the offset point of the on-screen activity

Note. These notations only include the additions to Jeffersonian (2004) transcription conventions.

About the Author

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